

## **REMARKS**

Claims 1 – 3 & 5- 14 are pending in the application. Claim 4 is canceled. Claims 1, 2 and 8 were rejected, while claim(s) 3-7 and 9-14 were non-elected.

### **Double Patenting**

Claims 1,2, and 8 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over all claims of copending Application No.10/556,990 (US 2007/0137528 A1).

Applicants respectfully traverse such a rejection as the application referred to relate to self-healing cement made of cement, water and swelling particles that swell when in contact with hydrocarbons. This corresponds to claim 1 of the co-pending application and all further dependent claims contain similar restrictions. The present set of claims relate to a cement composition that is susceptible to swell when in contact with residual water. Accordingly, both application do not encompass the same subject matter and are considered by the Applicants as being patentably distinct.

Should this be the last remaining objection, Applicants would be inclined to timely file a Terminal Disclaimer.

### **Claim Rejection 35 USC 102/103**

Claims 1, 2, and 8 were rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2001 146457 (X reference from Int'l Search Report), ZA 9100876 (X reference from Int'l Search Report), Heathman et al. '990,

Montgomery '012, '636, '503, '633, Darwin '158 or '343, Reddy et al. '841, Creel '802 A 1, or Pageau '302 A 1.

References cited in the International Search Report:

Applicants point out that JP 2001 146457 relates to cement paste (mortar) suitable for site casting, where the frame is removed after setting; Likewise, ZA 9100876 relates to mortar and cast concrete. Therefore none of these documents discloses all the features of present claim 1 and accordingly the present set of claims fulfills the requirement of 35 USC 102.

Further, in both documents the purpose of adding a super-absorbent polymer to the mortar is to improve placement and concrete setting. In JP 2001 146457 the problem is to avoid leakage of aqueous phase through the gates of molding frames. In ZA 9100876 the problem is to eliminate dust. None of these documents is related to the issue of self-healing, i.e. a set cement that is capable to reacts to formation fluids and blocks the formation of cracks. Accordingly, the present set of claims fulfills the requirement according to 35 USC 103.

Other References:

Heathman relates to methods and compositions involving a cement slurry and a liquid phase. The Examiner cites claim 20 on page 5; said claim depends upon claim 12 which is a method involving a cement slurry separation and a liquid solution preparation. The thickener is optionally present in the liquid solution, not in the cement slurry here. Then, the method involves pumping first the cement slurry in the wellbore, and afterwards the liquid solution is injected. This is far from the currently claimed composition, especially since the Applicant has amended

claim 1 to further emphasize that the material able to swell in contact with underground water is dry blended with cement before making a “single” slurry.

The Montgomery ‘012’ & ‘636’ relate to the concrete industry and aim at finding an additive for improving the flowability of concrete cement composition. This is at the opposite of the presently claimed invention since here the composition is intended for well cementing and thus shall be more than just flowable through a conduit. The slurry shall be pumpable on sometimes very long distances.

The Darwin ‘158’ relates also to the concrete and mortar industry and it is well explained in this document that concrete industry does have flowability problems as the amount of water used is very low in order to keep acceptable setting times. Basically, the intent is to replace part of the water used to form the concrete flowable material by a polymer in order to increase the viscosity of said water while still keeping some flowability, see col. 1, line 61 to col. 2, line 37. Here another time, the intent is not connected to the object of the present invention.

Reddy ‘841’ relates to composition for preventing gas or water flow but contrarily to the present invention, no cement mixture is supplemented with a swellable polymer.

The Examiner then refers to Creel, but here also claim 4 depends upon claim 1 which makes clear that the swelling material is first introduced into the wellbore and then only the cement slurry is pumped. This is different from the invention as presently claimed by the Applicant.

Finally, reference is made to Pageau. It is noted that the Pageau has been filed on April 6, 2004. The patent application has been filed on May 12, 2004 but claim the priority of US 60/470,341 dated May 14, 2003. As a matter of fact, and without further evidence, the Pageau is

not prior art as event occurring during the priority year according to the Paris Convention cannot be objected here.

The Applicants want to emphasize that one of the challenge of the present invention was to form self-healing cement suitable in the oilfield industry where the constraint is to keep acceptable pumpability with forming a slurry that after setting will be suitable to form a cement sheath providing adequate compressive strength, isolation, etc. In this connection, adding a super absorbant polymer to a slurry that is supposed to be pumped was definitely a challenge and none of the prior art cited do address such type of problem.

#### **Non-elected claims**

The comments from the Examiner were taken into account and the present set of claims has been modified so that claims 3-7 and 9-14 could be rejoined.

#### **General Remark:**

The term “system” has been removed from claims 3-14 in order to allow the non-elected claims to be rejoined. Then, this solve the issue relating to claim 8 being indefinite. The term “list” has been replaced by “group” in claims 11 and 14.

Applicant believes this reply to be fully responsive to all outstanding issues and that the present set of claims is now ready for allowance. In fact, all the claims not discussed in the present communication are dependent claims upon patentable independent ones.

The Commissioner is authorized to charge any fee associated with the submission of this response to Deposit Account No. 50-2183 (Ref. No. 21.1244).

The Examiner is invited to contact the undersigned attorney at 281-285-8606 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully Submitted,

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